

Claims Listing:

1-8 (Cancelled)

9. (Previously Presented) The vehicular mountable cargo container (10) as recited in claim 13, wherein each of said pair of spring-biased struts is configured to avoid delivering a closing-assist force between the top and bottom portions of the cargo container that urges the container toward the closed configuration.

10. (Previously Presented) The vehicular mountable cargo container (10) as recited in claim 13, wherein each of said pair of spring-biased struts is configured to prevent delivering a closing-assist force between the top and bottom portions of the cargo container that urges the container toward the closed configuration.

11. (Previously Presented) The vehicular mountable cargo container (10) as recited in claim 13, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby urging maintenance of a parallel orientation of said top portion, relative to said bottom portion of said cargo container when transitioned by an operator between the open and closed configurations.

12. (Previously Presented) The vehicular mountable cargo container (10) as recited in claim 13, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby preventing an inducement of said top portion to torque, relative to said bottom portion of said cargo container when transitioned by an operator between the open and closed configurations.

13. (Previously Presented)

A vehicular mountable cargo container (10) comprising:

a top portion (30) of said vehicular mountable cargo container hinge-connected for pivotation relative to a bottom portion (32) of the cargo container between open and closed configurations;

a pair of spring-biased struts (50), each operatively interposed between said top and bottom portions of said vehicular mountable cargo container, and one each of said pair of spring-biased struts located at opposed end regions of the cargo container; and

each of said pair of spring-biased struts being configured to exclusively deliver an assisting expansion force between the top and bottom portions of the cargo container for urging the container toward the open configuration and each of said pair of spring-biased struts comprising;

a cam surface provided at one of two arms of the strut, said cam surface establishing a surficial interaction between said two arms during transitions between first and second strut orientations; and

a force communication point (C_P) defined by a point of support of a non-cam surface including arm on a cam-including arm at said cam surface and which moves across the cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of an operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

14. – 16. (Cancelled)

17. (Previously Presented) The method as recited in claim 23, further comprising:

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a magnitude that increases compared to that imposed across the range of motion (T) of said lid portion (30) when operating in proximity of said open configuration.

18. (Previously Presented) The method as recited in claim 23, further comprising:

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a substantially zero magnitude when said lid portion (30) is in said closed configuration and thereby avoiding fatigue inducement at the strut-engaging portions of the lid portion (30) and bottom portion (32) of the cargo box (10).

19. (Cancelled)

20. (Previously Presented) The method as recited in claim 23, wherein each of said pair of spring-biased struts (50) further comprises:

a cam surface provided at one of said two arms and thereby establishing a cam-including arm and a non-cam-including arm, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

delimiters configured to limit the range of relative motion between said two arms so that throughout the entire range of transitional motion of said strut between said first and second strut orientations, said operationally effective force imposed by said biasing spring between said two arms urges exclusively unidirectional pivotation of said cam-including arm relative to said non-cam-including arm.

21. (Previously Presented)

A method for providing and controlling operation of a dual sided opening roof mount cargo box (10) for a carrying vehicle, said method comprising:

providing a dual sided opening roof mount cargo box (10) having a lid portion (30) releasably hinge-connected at two lateral sides to a bottom portion (32) of said cargo box (10) for alternate pivotation at each of the two lateral sides between open and closed configurations, said bottom portion (32) being adapted to be mounted to a carrying vehicle and said lid portion (30) being manufactured from a semi-flexible material sufficiently pliable to permit two opposite end regions thereof to be at different relative distances from the bottom portion (32) of the cargo box (10) during transition between the open and closed configurations;

providing a pair of spring-biased struts (50), each operatively interposed between said lid portion (30) and said bottom portion (32) of said cargo box (10), and one each of said pair of spring-biased struts (50) being located at said two opposite end regions of said cargo box;

imposing an expansively directed force on said lid portion (30), utilizing said pair of spring-biased struts (50), across a substantial entirety of travel of said lid portion (30) during operator induced movement from said closed configuration to said open configuration and thereby assisting the operator to smoothly open said cargo box (10);

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a magnitude that substantially balances a weight of said lid portion (30) across a range of motion (T) of said lid portion (30) when operating in proximity of said closed configuration and wherein each of said pair of spring-biased struts (50) further comprises:

two arms (60, 70) operatively connected for pivotation relative to one another through a delimited range of motion;

a biasing spring (80) operatively interposed between said two arms (60, 70) for operational influence during transition between first and second strut orientations that correspond to said open and closed configurations of said cargo box (10);

said two arms (60, 70) connected, one each, to said lid and bottom portions (30, 32) of said cargo box (10) thereby enabling said strut (50) to deliver said expansively directed force for urging the cargo box (10) into the open configuration;

a cam surface provided at one of said two arms and thereby establishing a cam-including arm and a non-cam-including arm, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations;

delimiters configured to limit the range of relative motion between said two arms so that throughout the entire range of transitional motion of said strut between said first and second strut orientations, said operationally effective force imposed by said biasing spring between said two arms urges exclusively unidirectional pivotation of said cam-including arm relative to said non-cam-including arm; and

a force communication point (C_P) being defined by a point of support of said non-cam-including arm on said cam-including arm at said cam surface and which moves across said cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

22. (Original) The method as recited in claim 21, wherein each of said pair of spring-biased struts (50) further comprises:

said non-cam-including arm comprising an arm body housing a spring biased slider therein, said slider being configured for relative reciprocation within said arm body and said slider presenting a reception surface for establishing a sliding point of contact with said cam

surface of said cam-including arm; said sliding point of contact coinciding with said force communication point (C_P).

23. (Previously Presented)

A method for providing and controlling operation of a dual sided opening roof mount cargo box (10) for a carrying vehicle, said method comprising:

providing a dual sided opening roof mount cargo box (10) having a lid portion (30) releasably hinge-connected at two lateral sides to a bottom portion (32) of said cargo box (10) for alternate pivotation at each of the two lateral sides between open and closed configurations, said bottom portion (32) being adapted to be mounted to a carrying vehicle and said lid portion (30) being manufactured from a semi-flexible material sufficiently pliable to permit two opposite end regions thereof to be at different relative distances from the bottom portion (32) of the cargo box (10) during transition between the open and closed configurations;

providing a pair of spring-biased struts (50), each operatively interposed between said lid portion (30) and said bottom portion (32) of said cargo box (10), and one each of said pair of spring-biased struts (50) being located at said two opposite end regions of said cargo box;

imposing an expansively directed force on said lid portion (30), utilizing said pair of spring-biased struts (50), across a substantial entirety of travel of said lid portion (30) during operator induced movement from said closed configuration to said open configuration and thereby assisting the operator to smoothly open said cargo box (10);

controlling said expansively directed force, through configuration of said pair of spring-biased struts (50), to have a magnitude that substantially balances a weight of said lid portion (30) across a range of motion (T) of said lid portion (30) when operating in proximity of said closed configuration; and wherein each of said pair of spring-biased struts (50) comprises:

two arms (60, 70) operatively connected for pivotation relative to one another through a delimited range of motion;

a biasing spring (80) operatively interposed between said two arms (60, 70) for operational influence during transition between first and second strut

orientations that correspond to said open and closed configurations of said cargo box (10);

said two arms (60, 70) connected, one each, to said lid and bottom portions (30, 32) of said cargo box (10) thereby enabling said strut (50) to deliver said expansively directed force for urging the cargo box (10) into the open configuration;

a cam surface provided at one of said two arms and thereby establishing a cam-including arm and a non-cam-including arm, said cam surface establishing a surficial interaction between said two arms during transitions between said first and second strut orientations; and

a force communication point (C_P) being defined by a point of support of the non-cam-including arm on said cam-including arm at said cam surface and which moves across the cam surface as said two arms pivot relative to one another between said first and second strut orientations during which said force communication point (C_P) remains exclusively on one side of a line oriented parallel to a direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms.

24. (Original) The method as recited in claim 23, wherein each of said pair of spring-biased struts (50) further comprises:

said non-cam-including arm comprising an arm body housing a spring biased slider therein, said slider being configured for relative reciprocation within said arm body and said slider presenting a reception surface for establishing a sliding point of contact with said cam surface of said cam-including arm; said sliding point of contact coinciding with said force communication point (C_P).

25. (Original) The method as recited in claim 24, wherein each of said pair of spring-biased struts (50) further comprises:

said line oriented parallel to the direction of said operationally effective force imposed by said biasing spring between said two arms and intersecting a pivot connection between said two arms being further oriented substantially parallel to a longitudinal axis (V_L) of the non-cam-including arm.

26. (Previously Presented) The method as recited in claim 23, wherein each of said pair of spring-biased struts (50) further comprises:

said operationally effective force imposed by said biasing spring between said two arms being a summation of a plurality of vector forces imposed by said biasing spring between said two arms.

27. (Previously Presented) The method as recited in claim 23, wherein each of said pair of spring-biased struts is configured to prevent the provision of a closing-assist force between said lid portion (30) and said bottom portion (32) that urges said cargo box (10) toward the closed configuration.

28. (Previously Presented) The method as recited in claim 23, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby urging maintenance of a parallel orientation of said lid portion (30), relative to said bottom portion of said cargo box (10) when transitioned by an operator between the open and closed configurations.

29. (Previously Presented) The method as recited in claim 23, wherein each of said pair of spring-biased struts is configured to perform in substantial unison, one with the other, thereby preventing an inducement of said lid portion to torque, relative to said bottom portion of said cargo box when transitioned by an operator between the open and closed configurations.